

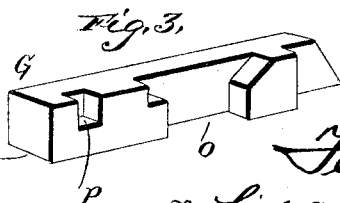
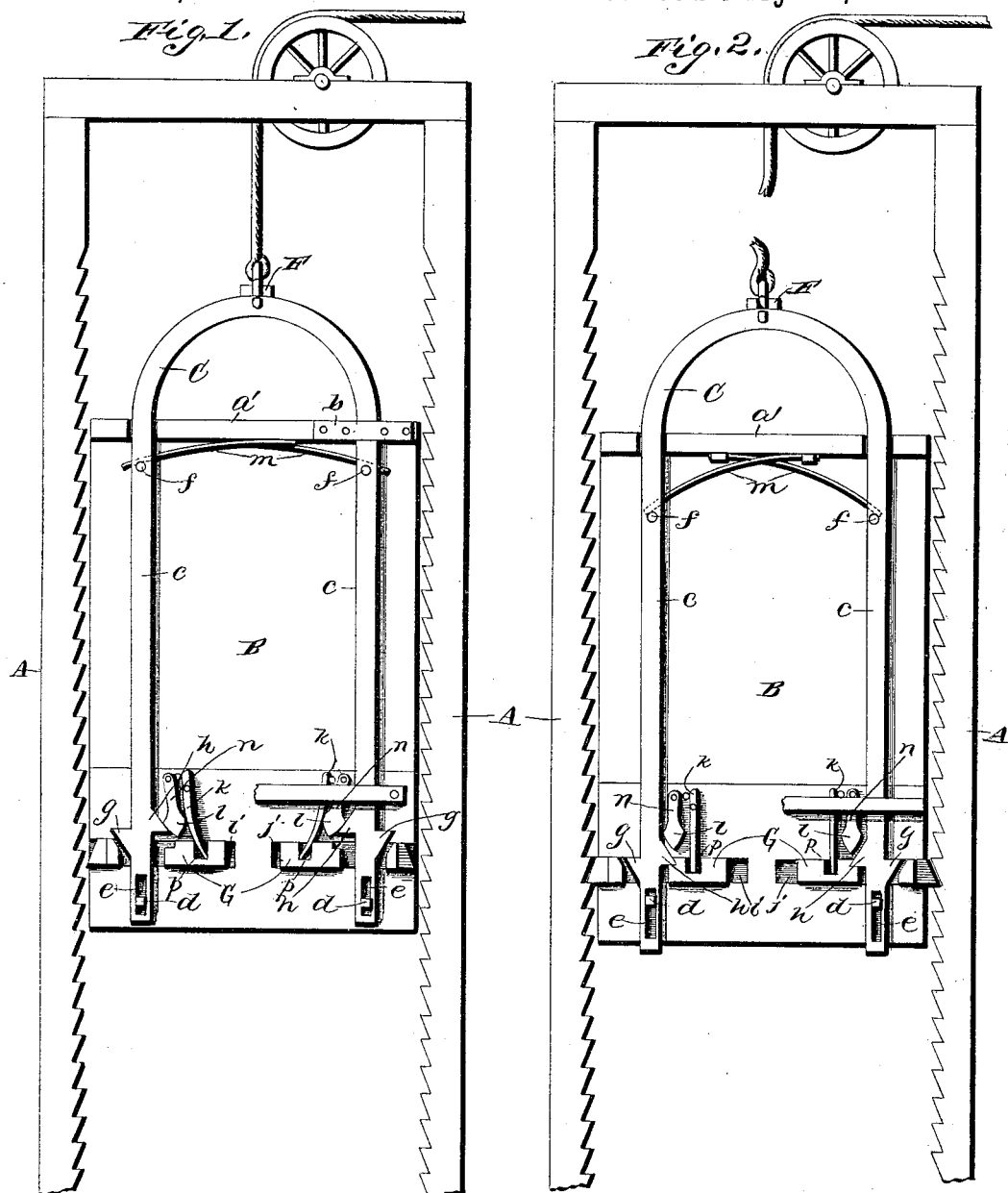
(No Model.)

F. TRABUE.

SAFETY DEVICE FOR ELEVATORS.

No. 386,565.

Patented July 24, 1888.



Witnesses.

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E Siggers.

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UNITED STATES PATENT OFFICE.

FENELON TRABUE, OF KINSLEY, KANSAS.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 386,565, dated July 24, 1888.

Application filed October 3, 1887. Serial No. 251,345. (No model.)

To all whom it may concern:

Be it known that I, FENELON TRABUE, a citizen of the United States, residing at Kinsley, in the county of Edwards and State of Kansas, have invented a new and useful Improvement in Safety Devices for Elevators, of which the following is a specification.

This invention relates to safety devices for elevators; and it consists in the improved construction, hereinafter described and explained, whereby any diminution of the tension of the suspending-rope will occasion the ready application of the safety devices.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical sectional elevation of an elevator-shaft and car therein, showing the normal position of the safety appliances. Fig. 2 is a like view showing the position of the parts when said appliances are thrown into operation. Fig. 3 is a detail view of the bolt G.

The elevator-shaft is provided at its respective corners with the usual vertical racks, A, to engage the stop devices of the elevator.

B refers to the frame of the car, which may be of any improved construction, but is provided on two opposite sides with the safety devices. The top beams, *a'*, of the car-frame are provided with guide-plates *b*, which retain and guide the vertical portions *c* of an inverted U-shaped metal frame, C, the lower ends of which extend down to the bottom of the car, and are guided thereat by means of metal projections *d*, which extend through vertical slots *e* in said lower ends. One of these metal frames is provided on each of the opposite sides of the car, although only one of them is seen in the drawings, for the reason that one of them is hid by the one directly in front of it. The upper portions of each of said frames are curved, as illustrated in the drawings, and said curved portions are connected by the cross-bar F, to which the suspending-cable is attached.

It will be noticed that each of the vertical portions of the metal frames C is provided on its inner side with a projecting lug, *f*, against which bears the free end of a leaf-spring, *m*, centrally secured to the under side of each of the beams *a'*. The vertical portions of each of the metal frames C are each provided imme-

diately above their slotted portions with two oppositely-extending offsets, *g h*, which are respectively arranged on opposite sides of each portion. Each offset is provided with an inclined face, the face of the inner offset inclining downward, while that of the outer offset extends in a reverse direction.

Two extended recesses, *ij*, are formed on each side of the elevator-car and on a horizontal line with each other, and within each of these recesses plays a horizontal bolt, G, which in itself is recessed, as at *o*, for the adjacent vertical portion of the metal frame to rest in. The recessing of the bolt leaves a front and rear portion projecting from the outer side of said bolt, and the front portion normally lies in contact with the upwardly-inclined face of the outer offset. A spring-lever, *k*, is pivoted upon the side of the car adjacent to each vertical portion of the metal frame, and the lower end of said lever extends down into a recess, *p*, formed in the rear projecting portion of the bolt below. A second lever, *n*, is pivoted on said side of the car, but nearer to the vertical portion, and the lower part of said lever-arm is provided with an enlargement, *l*, which has an outer inclined face contacting with the upper offset of the adjacent portion of the metal frame, while its inner side is provided with a projection which bears against the adjacent spring-lever.

In operation the tension of the rope, combined with the weight of the car, will cause the metal frames to be drawn upward, so that their upper inclined shoulders will operate the intermediate devices to hold the bolts in a retracted position. Should the cable break, the release of the metal frames should permit the spring *m* to throw the vertical portions of said metal frames downward relative to the said car, and thus cause the faces of the outer offsets to force the bolts into engagement with the racks, as will be readily understood. It will be seen that the movements of the metal frames are rendered certain and positive by reason of the fact that their vertical portions are properly guided, both above and below.

By the improvements herein explained the breaking of the suspending-rope will occasion the instantaneous application of the safety-catches, so that the car can acquire no more

momentum, which might otherwise break or wrench the safety appliances before they could securely engage the racks.

It will be understood, of course, that it is not necessary for the suspending-rope to break in order to operate my device, as should the rope become entangled in such a way as to release its tension, and consequently fail to support the car, the springs *m* will at once force the frames *C* downward, thereby projecting the bolts.

I claim—

1. The combination, with the racks and the elevated car, of the bolts located on the sides of the car and adapted to engage the racks, the vertically-movable frames mounted on the sides of the car and having offsets on their lower portions acting on the bolts to project the same, and levers acted upon by the frames to withdraw the bolts, substantially as set forth.

2. The combination, with the car and the racks, of the bolts located in the sides of the car to engage the racks, the vertically-movable frames having oppositely-inclined offsets on their lower portions to actuate the bolts and having the studs *f* on their upper portions, and the leaf-springs secured to the upper portion of the car and bearing on the studs *f* to depress the frames on the release of the rope-tension, as set forth.

3. The combination, with the racks and the car, of the bolts located in the sides of the car to engage the racks, the projections *d* on the lower portion of the car, the guides *b* at the upper portion thereof, the inverted-U-shaped frames moving through the guides *b* and having slots *e*, engaging the projections *d*, the said frames engaging the bolts, and springs at the upper portion of the car to depress the said frames upon the release of the tension of the rope, as set forth.

4. The combination, with the racks and the car having horizontal recesses in its sides, of

the vertically-movable frames mounted on the sides of the car and connected to the suspending-rope and having oppositely-inclined offsets on their lower portions, and the bolts located in the recesses in the sides of the car, the said bolts being projected and withdrawn by the action of the offsets on the vertically-movable frames, substantially as set forth.

5. The combination, with the car and racks, of the inverted-U-shaped frames movable vertically on the sides of the car, the bolts located on the sides of the car and actuated by said frames to engage said racks and having recesses *p* in their inner portions, and the spring-levers having their upper ends secured to the sides of the car and their lower ends engaging the recesses *p*, substantially as set forth.

6. The combination, with the car and the racks, of the bolts located on the sides of the car to engage the racks, the vertically-movable frames mounted on the sides of the car and having inclined offsets *g* to actuate the bolts, and spring-levers having their upper ends secured to the sides of the car above the bolts and having their lower ends engaging the bolts, as set forth.

7. The combination, with the car and the racks, of the bolts located in the sides of the car and adapted to engage said racks, the vertically-movable frames mounted on the sides of the car and engaging the bolts, the spring-levers mounted on the sides of the car and engaging the bolts, and the levers *n*, mounted on the car between the spring-levers and the vertically-movable frames, substantially as and for the purposes specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FENELON TRABUE.

Witnesses:

T. A. SMITH,
WM. FLAG.